

CLAIMS

1. A medical imaging apparatus, comprising:  
a plurality of detectors for acquiring image data of one  
or more objects simultaneously;  
5 a gantry for positioning the plurality of detector means  
about one or more objects;  
an electronic controller and data acquisition system for  
configuring and controlling the operation of the  
plurality of detectors in a plurality of modes, a  
10 first mode being that the plurality of detectors  
acquires image data of a first object, and a second  
mode being that the plurality of detectors acquires  
image data of a plurality of objects simultaneously.

2. The medical imaging apparatus of Claim 1, wherein  
15 the gantry suspends the first detector and the second detector  
from above the object.

3. The medical imaging apparatus of Claim 1, wherein  
the gantry suspends the first detector from a first support  
arm and the gantry suspends the second detector from a second  
20 support arm.

4. The medical imaging apparatus of Claim 1, wherein  
the gantry suspends the first detector from a first support  
arm and the gantry suspends the second detector from a second  
support arm; wherein the gantry is configured to position the  
25 first support arm along a first longitudinal axis and a first  
horizontal axis, the first horizontal axis being perpendicular  
to the first longitudinal axis; the gantry is able to position  
the second support arm along a second longitudinal axis and a

second horizontal axis, the second horizontal axis being perpendicular to the second longitudinal axis; the first support arm is configured to position the first detector along a first vertical axis being perpendicular to the plane formed by the first longitudinal axis and the first horizontal axis; and the second support arm is configured to position the second detector along a second vertical axis being perpendicular to the plane formed by the second longitudinal axis and the second horizontal axis.

5. The medical imaging apparatus of Claim 1, wherein the electronic controller and data acquisition system comprise a graphical user interface.

6. The medical imaging apparatus of Claim 1, wherein the electronic controller and data acquisition system comprise graphical user interface capable of in at least one of a full-screen mode displaying information regarding one of the first object and the second object and a split-screen mode simultaneously displaying information regarding the first object and the second object.

7. A medical imaging apparatus, comprising:  
a first detector for acquiring image data of a first object;  
a second detector for acquiring image data of at least one of the first object and a second object;  
a gantry coupled to the first detector and the second detector for positioning the first detector and the second detector at a plurality of positions about one or more axes for acquisition of image data, wherein the gantry is able to position the first detector and

the second detector such that the first detector may acquire image data of the first object simultaneously as the second detector acquires image data of the second object, and wherein the gantry is able to position the first detector and the second detector such that the first detector and the second detector may acquire image data of the first object; and an electronic controller and data acquisition system for configuring and controlling the operation of the first detector and the second detector in a plurality of modes, a first mode being that at least one of the first detector and the second detector acquires image data of a first object, and a second mode being that the first detector and the second detector acquire image data of a plurality of objects simultaneously.

8. The medical imaging apparatus of Claim 7, wherein the gantry suspends the first detector and the second detector from above the object.

9. The medical imaging apparatus of Claim 7, wherein the gantry suspends the first detector from a first support arm and the gantry suspends the second detector from a second support arm.

10. The medical imaging apparatus of Claim 7, wherein the electronic controller and data acquisition means comprise a graphical user interface.

11. The medical imaging apparatus of Claim 7, wherein the electronic controller and data acquisition means comprise graphical user interface capable of in at least one of a full-

screen mode displaying information regarding one of the first object and the second object and a split-screen mode simultaneously displaying information regarding the first object and the second object.

- 5 12. A medical imaging apparatus, comprising:  
a first detector means for acquiring image data of a first object;  
a second detector means for acquiring image data of at least one of the first object and a second object;  
10 a gantry means for positioning the first detector and the second detector at a plurality of positions about one or more axes for acquisition of image data;  
an electronic controller and data acquisition means coupled to the first detector and the second detector  
15 for configuring and collecting image data, wherein the electronic controller and data acquisition means is configured for controlling the first detector collecting image data for a first object and for controlling the second detector collecting image data  
20 for a second object.

13. The medical imaging apparatus of Claim 12, wherein the gantry suspends the first detector and the second detector from above the object.

25 14. The medical imaging apparatus of Claim 12, wherein the gantry suspends the first detector from a first support arm and the gantry suspends the second detector from a second support arm.

15. The medical imaging apparatus of Claim 12, wherein the electronic controller and data acquisition means comprises graphical user interface.

16. The medical imaging apparatus of Claim 12, wherein  
5 the electronic controller and data acquisition means comprise graphical user interface capable of in at least one of a full-screen mode displaying information regarding one of the first object and the second object and a split-screen mode simultaneously displaying information regarding the first  
10 object and the second object.

17. A method of using a medical imaging system to acquire image data of one or more objects, the method comprising the steps of:

15 determining whether image data is to be acquired in a single-planar mode or a multi-planar mode;  
upon determining that image data is to be acquired in a single-planar mode, acquiring from one or more detectors image data of a first object; and  
20 upon determining that image data is to be acquired in a multi-planar mode, acquiring simultaneously from a plurality of detectors image data of a plurality of objects.

18. A method of using a medical imaging system to acquire image data of one or more objects, the method  
25 comprising the steps of:

determining whether image data is to be acquired in a single-planar mode or a multi-planar mode;  
upon determining that image data is to be acquired in a single-planar mode, performing the substeps of:

positioning one or more detectors about a first object for which the image data is to be acquired; and

acquiring from the one or more detectors image data of the first object; and

upon determining that image data is to be acquired in a multi-planar mode, performing the substeps of:

positioning a plurality of detectors about a plurality of objects for which image data is to be acquired; and

acquiring simultaneously from the plurality of detectors image data of the plurality of objects.

19. A computer program product for acquiring image data of one or more objects, the computer program product having a medium with a computer program embodied thereon, the computer program comprising:

computer program code for determining whether image data is to be acquired in a single-planar mode or a multi-planar mode;

computer program code for, upon determining that image data is to be acquired in a single-planar mode, acquiring from the one or more detectors image data of a first object; and

computer program code for, upon determining that image data is to be acquired in a multi-planar mode, acquiring simultaneously from a plurality of detectors image data of a plurality of objects.

20. A computer program product for acquiring image data of one or more objects, the computer program product having a

medium with a computer program embodied thereon, the computer program comprising:

computer program code for determining whether image data is to be acquired in a single-planar mode or a multi-planar mode;

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computer program code for, upon determining that image data is to be acquired in a single-planar mode, configuring one or more detectors to acquire image data of a first object and acquiring from the one or more detectors image data of the first object; and

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computer program code for, upon determining that image data is to be acquired in a multi-planar mode, configuring a plurality of detectors to acquire image data of a plurality of objects and acquiring simultaneously from the plurality of detectors image data of the plurality of objects.

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